USE OF STAPLE WITH OTHER RESIDUAL HERBICIDES IN MID-SOUTH COTTON

S. K. Bangarwa
J. K. Norsworthy
G. M. Griffith
E. McCallister
P. Jha
B. Johnson
University of Arkansas
Fayetteville, AR
R. Edmund
DuPont Agricultural Products
Little Rock, AR

Abstract

Roundup Ready technology provided cotton producers an effective and convenient weed management tool. However, glyphosate does not provide effective control of some broadleaf and grass weed species. In addition, because of increasing number of glyphosate-resistant weed species, farmers cannot rely only on glyphosate for weed management and need to use alternative herbicide programs. However, postemergence herbicide options are limited in cotton because of crop sensitivity and size-dependent herbicidal activity. Therefore, it is imperative to develop an effective and broad-spectrum residual weed management program in cotton. Staple LX (pyrithiobac) can be a good candidate for a residual program because of its soil activity on a number of broadleaf and grass weeds. A field experiment was conducted in 2009 to evaluate cotton response and weed control efficacy of different residual herbicide programs with Staple LX in cotton. The experiment was organized in a randomized complete block design with four replications. The residual herbicide programs included various combinations of preplant (Reflex, Direx) and preemergence (Direx) herbicides, applied alone or in combination with Staple LX. Cotton injury was ≤25% in all herbicide programs at 4 WAP, with no significant increase in injury from Staple LX. Staple LX improved early-season control of broadleaf signalgrass and pitted morningglory up to 17 percentage points, especially in programs including Reflex preplant and no preemergence herbicide. However, Staple LX failed to improve Palmer amaranth control from any of the residual herbicide programs. This research demonstrates the benefit of incorporating Staple LX in to herbicide programs consisting of weak residual herbicides.